

CHECK LIST FOR THE B.S. DEGREE IN BIOLOGY EMPHASIS IN EVOLUTION AND SYSTEMATICS

Emphasis Adviser: Dr. Tod Reeder (LS-264)

This field of biology focuses on the evolutionary relationships among species and the processes that drive evolutionary change. Systematics is the detailed study of a group of organisms to determine their evolutionary relationships (phylogeny), clarify its classification, and assess trends in ecology, biogeography, and evolutionary processes. Evolutionary biologists explore mechanisms such as mating systems, mutation, drift, gene flow and natural selection with studies of anatomy, behavior, biogeography, development, ecology, genetics, and molecular biology of both living and fossil organisms. Students are encouraged to conduct research through Biology 497/499, and acquire laboratory skills and expertise with a particular group of organisms. Graduates can work in universities, museums, botanical gardens, zoos and biotechnology companies, or with various governmental agencies.

PREPARATION FOR THE MAJOR (39 units of lower division courses)

Biol 203	Principles of Cell & Molecular Biol.	3	___	Chem 232	Organic Chemistry	3	___
Biol 203L	Princ. of Cell & Molecular Biol. Lab	1	___	Chem 232L	Organic Chemistry Lab	1	___
Biol 204	Principles of Organismal Biology	3	___	Math 121	Calculus for the Life Sciences I	3	___
Biol 204L	Principles of Organismal Biology Lab	1	___	Math 122	Calculus for the Life Sciences II	3	___
Biol 215	Biostatistics	3	___	Phys 180A	Fundamentals of Physics	3	___
Chem 200	General Chemistry	5	___	Phys 182A	Physical Measurements	1	___
Chem 201	General Chemistry	5	___	Phys 180B	Fundamentals of Physics	3	___
				Phys 182B	Physical Measurements	1	___

Biology is an **impacted major**. Students who wish to declare a Biology major are initially placed into the Biology **premajor**. Premajors must meet department-specific criteria in order to be admitted to the major. (Note that admission to SDSU is a separate process from admission to the major, and is reviewed by a separate administrative unit.)

For this catalog year, admission to the Biology major requires:

- completion of the Preparation for the Major courses
- a GPA of 2.7 or higher in Preparation courses
- a minimum grade of C in each Preparation course
- an overall GPA of at least 2.6
- satisfaction of the lower-division writing competency requirement
- no coursework for the premajor or the major may be graded Cr/NC

Students who have completed these requirements must meet with the Biology undergraduate advisors to be admitted to the major. Students who do not meet one or more minimum grade or minimum GPA requirements should meet with the Biology undergraduate advisors to determine the appropriate course of action.

EMPHASIS IN EVOLUTION AND SYSTEMATICS (Minimum of 36 upper division units)

Required courses (18 units):

Biol 352	General Genetics and Evolution	3	___	Biol 366	Biochem., Cell and Mol Biol. II	4	___
Biol 354	Ecology and the Environment	3	___	Biol 366L	Biochem., Cell and Mol Biol. Lab. I	2	___
Chem 365	Biochem., Cell and Mol Biol. I	3	___	Biol 509	Evolutionary Biology	3	___

Elective courses (18 units): At least 12 of the required 18 units of upper division electives must be selected from the following list. Two or more electives must be laboratory courses, one of which must be an organismal course*. The remaining 6 units can include Biology 350-599 (except Biology 452), and certain Chemistry courses between 410A-599.

†Biol 458	Plant Biology*	3	___	Biol 526	Terr. Arthropod Biol.*	4	___	Biol 596	Biology of Fishes	4	___
Biol 460	Economic Botany*	3	___	†Biol 527	Animal Behavior	3	___	Biol 596	Ecolog. Metagenomics	3	___
Biol 508	Coevolution	3	___	†Biol 527L	Animal Behavior Lab	1	___				
Biol 510	Molecular Evolution	3	___	Biol 528	Microbial Ecology*	3	___	Biol 497/499 Special Study/Research			
Biol 511	Evol. Development	3	___	†Biol 530	Plant Systematics*	4	___	(max. 3 u) ¹ 1-3			
†Biol 512	Ev. Ecol. Mar. Mamm.*	3	___	Biol 531	Taxonomy Cal. Plants*	4	___	Biol 490 Undergrad. Honors Research ¹			
Biol 515	Marine Invert. Biology*	4	___	†Biol 546	System. and Biodiv.	3	___				
†Biol 523	Herpetology*	4	___	Biol 568	Bioinformatics	3	___				
†Biol 524	Ornithology*	4	___	†Biol 576	Developmental Biology	3	___	Other			
†Biol 525	Mammalogy*	4	___	†Biol 588	General Parasitology*	3	___	Other			

* Approved organismal courses † Not taught in AY 11-12.

¹ Prior approval of the Biology adviser (in LS-135) is needed and papers must be filed with the Office of Advising & Evaluations.

Department of Biology

<http://www.bio.sdsu.edu/>

San Diego State University
5500 Campanile Drive
San Diego, CA 92182-4614

Undergraduate Advising Office

<http://www.sci.sdsu.edu/bioadvise/>

Life Sciences North, Room 135
Phone (619) 594-6442 Fax (619) 594-5676
bioundergrad@sunstroke.sdsu.edu

Dr. Andrew J. Bohonak, Vice Chair of Biology, and
Director of Undergraduate Advising and Curriculum

Mr. Eddie Lopez, M.S., Associate Director of Advising

Ms. Arlene Castillo, M.S., Administrative Coordinator

Degree opportunities

The Department of Biology offers the following degrees:

B.S. in Biology, with optional emphases in Bioengineering, Cellular & Molecular Biol., Ecology, Evolution & Systematics, Marine Biology, or Zoology	B.A. in Biology
B.S. in Microbiology, with an optional emphasis in Clinical Laboratory Science or Public Health Microbiology	B.A. in Microbiology
Minor in Biology, with optional emphases in five areas	Biotechnology Certificate

Coursework to demonstrate subject matter competency for the
Single Subject Teaching Credential in Biology/Life Sciences

For the most current information, see the bioadvising web page

<http://www.sci.sdsu.edu/bioadvise/>

- Answers to 25 Frequently Asked Questions
- Calendar of important dates
- Checklists of courses required for each of our degrees
- Course offerings we are planning for the entire academic year
- Information on new 496 and 596 "Special Topics" courses
- Course syllabi

Additional information

Explanation of graduation requirements: <http://arweb.sdsu.edu/es/advising/9gradreqs.html>

Preprofessional Health Advising Office (GMCS-323): <http://www.sci.sdsu.edu/preprof/>

Articulation of transferable courses from CA community colleges: www.assist.org

Articulation of science courses not listed on www.assist.org: meet with Biology advisors

Career Services (register with them by your sophomore year): SSE 1200, <http://career.sdsu.edu/>

Chemistry 200 placement exam: http://www.chemistry.sdsu.edu/courses/CHEM200/200_Placement_exam.php

Prospective students: <http://www.sdsu.edu/prospective.html>